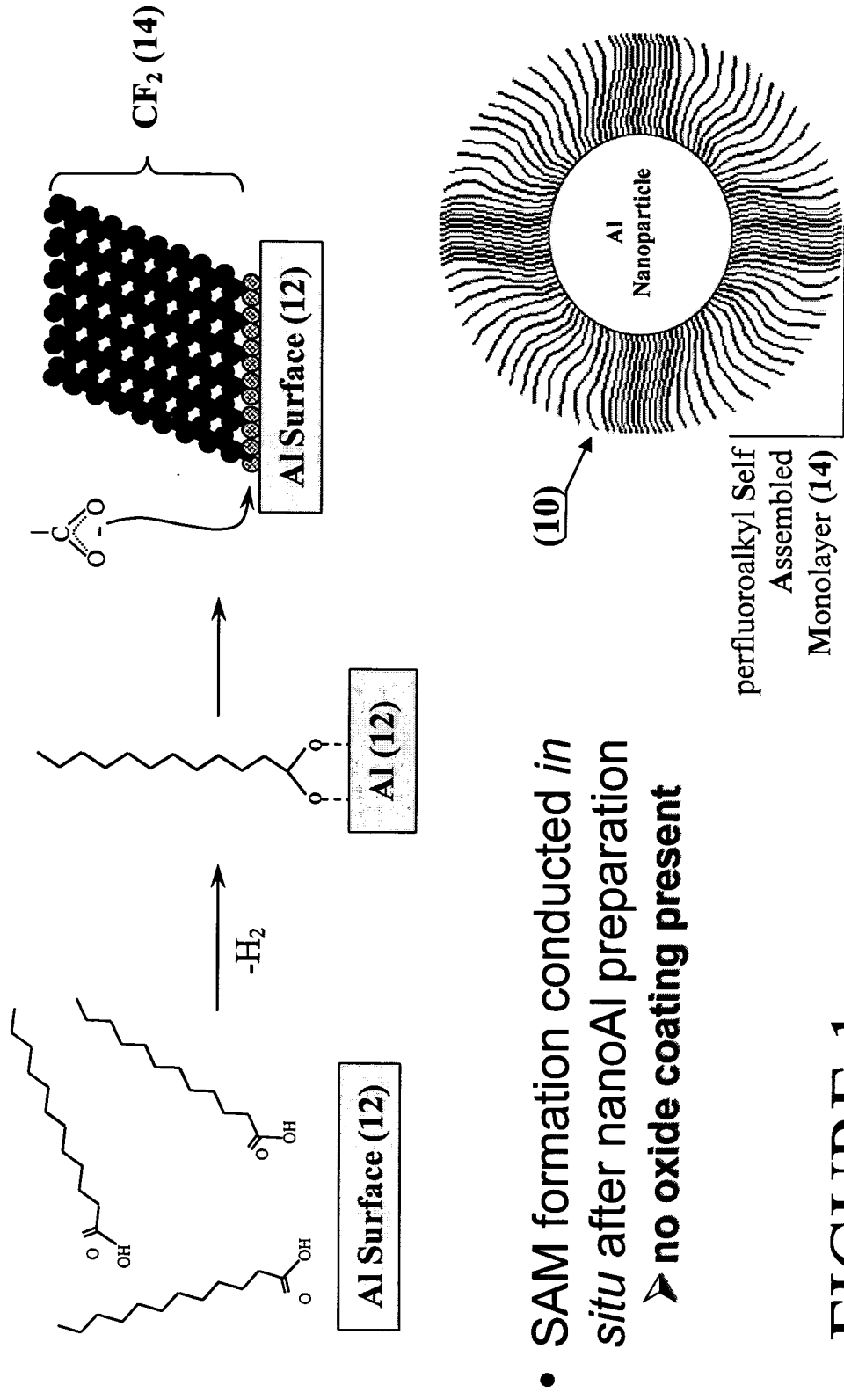


NanoAl Surface Functionalization



- SAM formation conducted *in situ* after nanoAl preparation ➤ **no oxide coating present**

FIGURE 1

ATR-IR of $C_{14}F_{27}O_2H/Al$ Composite

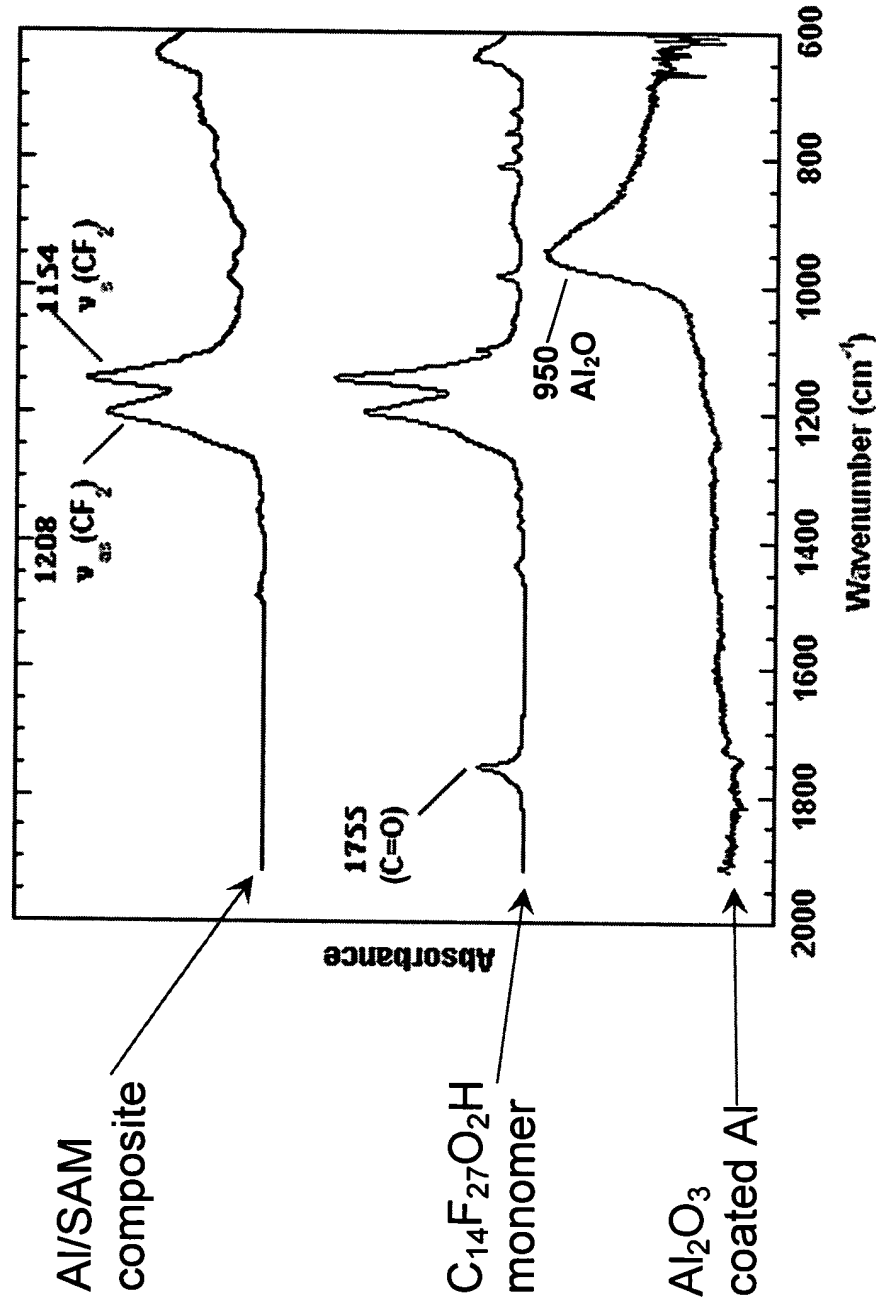


FIGURE 2

TGA of C₁₄F₂₇O₂H/Al Composite

Weight % v. Time

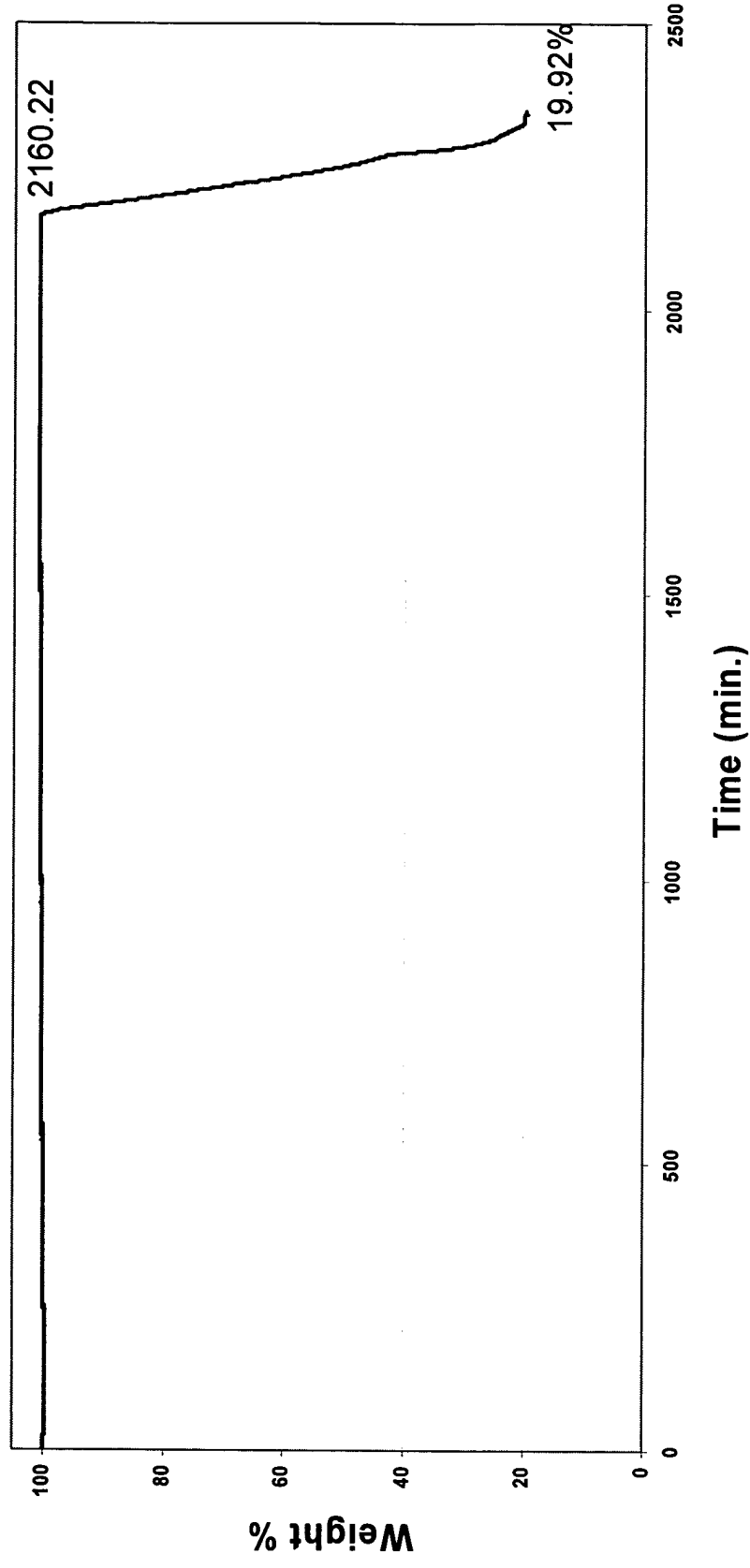


FIGURE 3a

TGA of $C_{14}F_{27}O_2H/Al$ Composite

Heating Profile

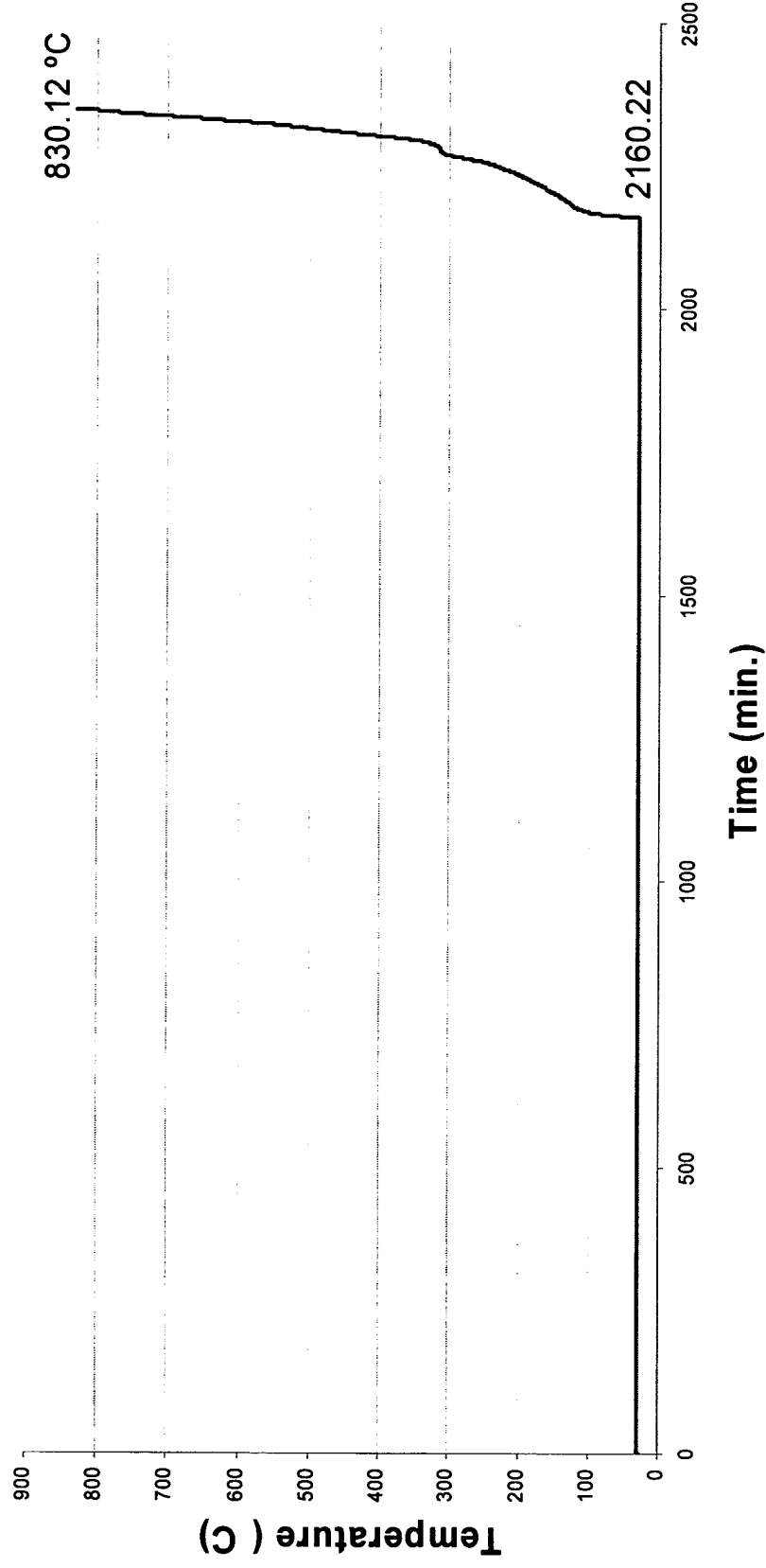


FIGURE 3b

TGA of C₁₄F₂₇O₂H/Al Composite

Weight % v. Temperature

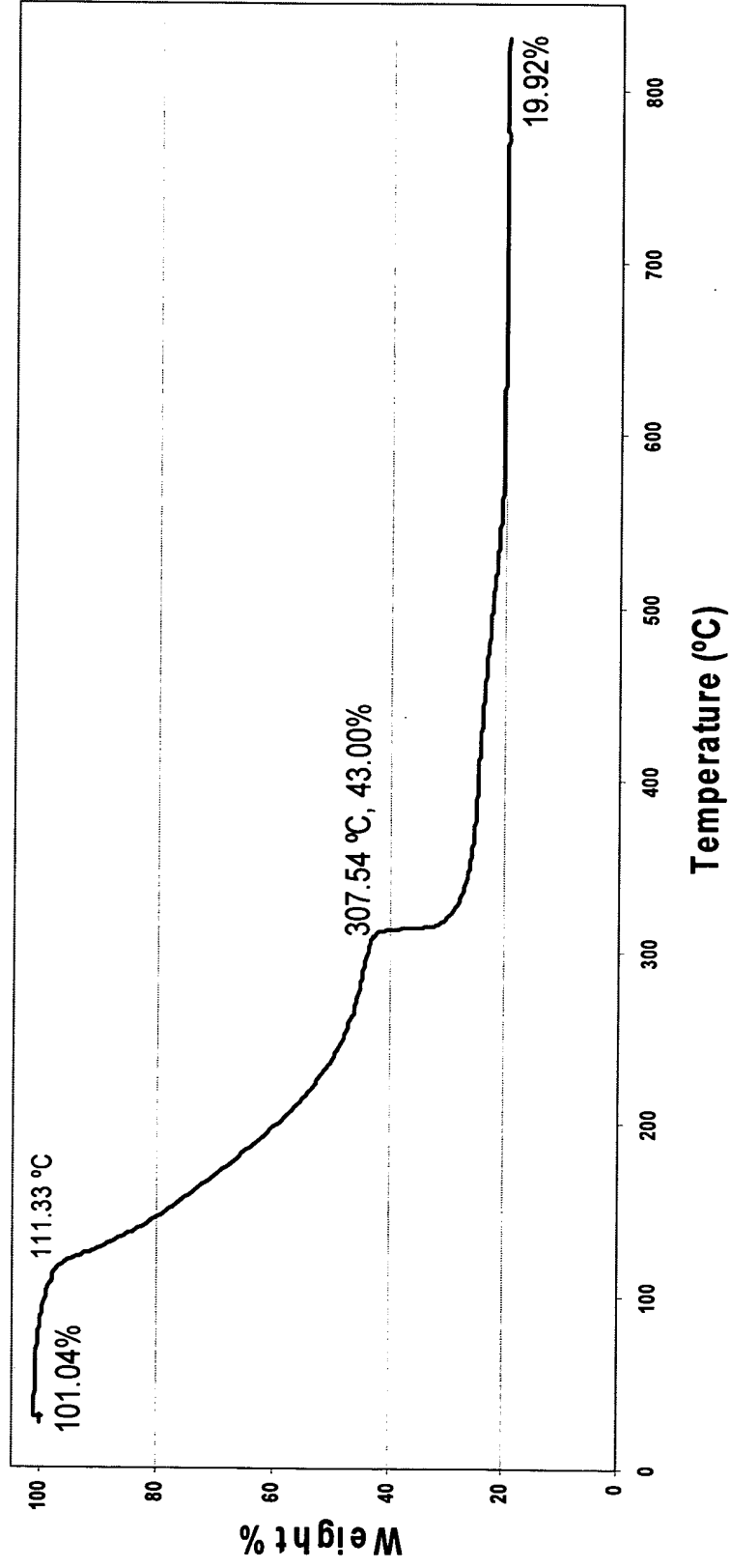
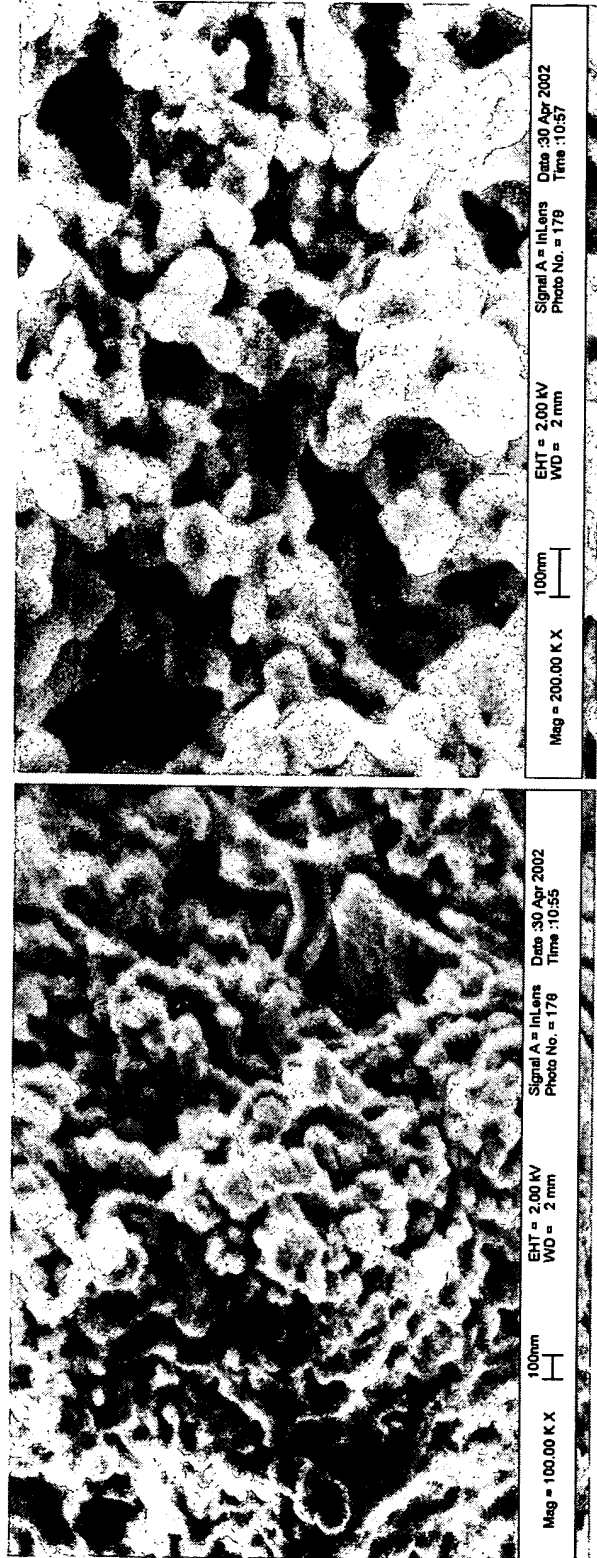


FIGURE 3c

SEM/EDAX of $C_{14}F_{27}O_2H/Al$ Composite



Element	Mole %
C	44.97
O	7.77
F	44.00
Al	3.27

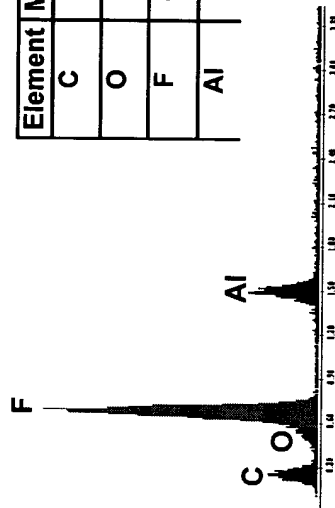


FIGURE 4

Monomer Size – Particle Composition

monomer	Mass (g) Al	Mass (g) monomer*	Molar Ratios*		
			Al	C	F
C₁₄F₂₇O₂H	0.175	0.94	1.00	2.85	5.49
C ₁₃ F ₂₅ O ₂ H	0.175	0.88	1.00	2.65	5.09
C ₁₂ F ₂₃ O ₂ H	0.175	0.81	1.00	2.44	4.68
C₁₁F₂₁O₂H	0.175	0.74	1.00	2.24	4.27
C ₁₀ F ₁₉ O ₂ H	0.175	0.68	1.00	2.04	3.87
C₉F₁₇O₂H	0.175	0.61	1.00	1.83	3.46
C ₈ F ₁₅ O ₂ H	0.175	0.55	1.00	1.63	3.05
C ₇ F ₁₃ O ₂ H	0.175	0.48	1.00	1.42	2.65
C ₆ F ₁₁ O ₂ H	0.175	0.41	1.00	1.22	2.24
C₅F₉O₂H	0.175	0.35	1.00	1.02	1.83

*Assumes a molar ratio of 4.93:1 Al to monomer

FIGURE 5